



PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE
(HORTICULTURAL BRANCH).

GARDENING ON A CITY LOT.

INCREASED production is essential. It behoves every man, woman, and child to cultivate every foot of ground possible. In the aggregate there are hundreds of acres lying idle in city lots and back gardens; this land must be made to produce. We must become greater vegetarians and allow wheat, beef, and bacon to be exported to our men at the Front.

It is estimated that, if all vegetables were bought, a family of five would expend an average of 35 cents per day or \$127.75 per year. The majority of vegetables required could be produced at home, with but a few dollars expenditure for tools, seed, and fertilizer.

Fresh Vegetables every Month.

Because of the mild climate of the Coast and Island districts it is possible to have fresh vegetables from the garden every month of the year. The following list will give an indication of what might be expected from the garden each month:—

January and February, kale, parsnips, leeks, lettuce, and parsley; March, spinach and broccoli; April, radish, onions, rhubarb, and broccoli; May, asparagus and peas; June, early cabbage, carrots, and beets; July, early potatoes, parsnips, and beans; August, tomatoes, cauliflower, onions, cucumbers, and summer squash; September, cabbage, salsify, and herbs; October, celery, brussels sprouts, leeks, and winter squash; November, fall lettuce and early spinach; December, same as for January and February.

Besides the fresh vegetables which may be had through the winter months, the gardener can have a large variety stored, including potatoes, beets, carrots, onions, celery, squash, and turnips.

The Preparation of the Ground.

Too much stress cannot be placed on the importance of preparing a good seed-bed. In the fall, land intended for gardening purposes should be cleared of all rubbish and ploughed or spaded to a depth of not less than 7 inches. This operation will leave the land rough, and, besides opening the soil to the effects of the weather and permitting it to absorb a maximum of rainfall, will aid in freeing it from injurious insects or other pests. No other operations are necessary until spring, unless some fertilizer is to be applied; the kind, time, and amount to apply is taken up under "Fertilizers."

Even though the soil was well spaded in the fall, the winter rains will have packed it, so that another spading will be advisable in the spring. Previous to this operation, all manures other than nitrate of soda should be applied, so that they will be worked well into the soil.

Following this the surface of the soil should be raked over with a hand-rake several times to rid the soil of any clods and to ensure a firm seed-bed. As the planting is not all done at once, the unplanted area should be hoed and hand-raked before planting, in order to kill all weeds which may have started and to hold the moisture which is necessary to start the seed growing when it is planted.

Fertilizers.

Undoubtedly, well-rotted stable manure is the best fertilizer for the garden. Besides the plant-food it contains, it has a great value in improving the physical condition of the soil. It lightens heavy soils and makes them earlier, while it has a binding action on light soils, which increases their capacity for retaining moisture and accelerates the liberation of plant-food. Where winter rains are common, it is best to apply manure in the early spring and work it into the soil immediately.

Commercial fertilizers are also valuable, especially where manure is not available, and also when used in conjunction with barnyard manure. Their main value lies in the amount of nitrogen, phosphoric acid, and potash they contain. These three elements may be purchased ready mixed as a complete fertilizer, or the elements may be purchased separately and applied. Potash and phosphatic manures should be applied during the winter months; nitrate of soda, in which we find nitrogen in the most available form, should be applied to the growing crop, as it is easily washed out of the soil.

As a rule, crops grown for the leaf production, as spinnach, cabbage, and lettuce require a higher percentage of nitrogen than those grown for the root or tuber production, such as beets, carrots, potatoes, etc., which require a greater amount of potash and phosphoric acid. Since

the vegetable-garden is usually mixed as regards the fertilizer requirements, it is best to give a general dressing of fertilizer.

The following mixture is recommended for a garden 50 x 50 feet: Nitrate of soda, 16 lb.; muriate or sulphate of potash, 25 lb.; and phosphoric acid in the form of bone-meal finely ground, 50 lb., or acid phosphate 15 lb. These fertilizers should be applied as mentioned above.

It is practically impossible to secure potash in chemical form at the present time, and applications of wood-ashes and kelp or seaweed should be made where possible.

The application of lime is beneficial to most soils. It should be applied during the winter. From 50 to 100 lb. is sufficient for a plot 50 x 50 feet.

Planting and Cultivation.

When planting, a garden-line is necessary in order to ensure straight rows. All the tools that will be necessary are a strong spade or shovel, hoe, and garden-rake. A trowel for transplanting-work will also be found to be useful. Depth of planting seed will be found in the table at the back of the circular. Transplanting should be done during the latter part of the day, and the plants are always set deeper than they stood in the seed-bed. When transplanting, be sure that the earth is well packed around the roots in order that root-action may start at once.

After the seedlings begin to show and after any transplanting is done, cultivation should be the rule. By keeping the ground thoroughly hoed, not only is moisture held in the soil, but the plant-food in the soil is made available through the action of the air. On large garden-plots a machine with planter attachment will be found to save time in planting and to decrease the cost of hoeing.

Garden-plan.

The garden, especially the small one, should be systematically planned. Vegetables which remain in the ground for some years should be kept at one side. Succession-cropping should be practised as follows: Early radishes, spinnach, and lettuce, when matured, may be followed by late potatoes, late cabbage, or beans. Early peas and beans may be followed by late beans or celery. Companion-cropping—the growing of two crops on the same land at the same time—can also be practised to advantage as follows: The small globe-shaped radish, leaf lettuce, and spinach may be grown between rows of beets, carrots, and parsnips. Tomatoes and sweet corn are sometimes planted between rows of early peas and early potatoes, and become well established by the time the latter crops are matured.

The following plan is a suggestion of how a plot 50 x 50 feet may be planted:—

PLAN FOR A SMALL GARDEN. CROPS GROWN IN ROWS.

E.

4'	ASPARAGUS.	ARTICHOKES.
3'	HERBS.	HORSE-RADISH. RHUBARB.
3'	EARLY POTATOES, followed by SWEDE TURNIPS.	
1'	RADISH. LETTUCE, followed by TOMATOES.	
1'	SPINACH, followed by LATE BEETS.	
2'	PEAS, followed by BROCCOLI.	
2'	LATE PEAS.	
2'	BEANS.	
1' 6"	ONIONS.	
1' 6"	BEETS.	
1' 6"	CARROTS.	
2'	PARSNIPS.	
2'	TURNIPS, followed by LATE LETTUCE.	
3'	CORN.	
4'	CUCUMBER.	SQUASH.
2' 6"	CABBAGE.	
2'	CAULIFLOWER.	
3'	CELERY.	
3'	LATE POTATOES.	
3'	LATE POTATOES.	
3'	LATE POTATOES.	

N.

S.

W.

Scale, 1"=12½'

Plants for the Garden.

It is often necessary to start plants of certain crops before the danger of frost is over. This may be done by sowing the seed in shallow boxes, which may be put in a south window of a dwelling-house, or by sowing in a hotbed, or in a cold frame for later plants. Early cabbage, early cauliflower, tomatoes, celery, etc., are started in this way, and later transplanted two or three times before finally setting them in the open ground. The shallow-box, about 4 inches deep, does very well to start the early plants in when only a few are required. Fill this box about three-quarters full of good soil made up of one part well-rotted manure, three parts good garden loam or rotted sods, and one part of fine sand. Have holes in the bottom of the box so

that it will drain easily. The seed may be sown in rows and about $\frac{1}{4}$ inch deep, or sown broadcast and covered over with a light covering of soil.

In order to lengthen the season of fresh vegetables, and also to raise plants of varieties that require a long season, the hotbed is often employed. The heat for this is supplied by fermenting stable manure. When collecting the manure, care should be taken to see that it is not "fire-fanged" or "burnt out." It should be well tramped, and when the necessary amount has been collected it should be turned over once, allowed to stand until thoroughly heated, and then made into a hotbed.

The hotbed should be located on the south side of buildings or a fence, and protected from cold winds as much as possible. The location should also be drained. A two-sash frame will be large enough for use in the average garden. The frame for supporting two sashes will need to be 6 x 6 feet, 18 inches high at the back and 12 inches in the front. Each sash will be 3 x 6 feet. Other sizes may be used and the frame made accordingly.

The manure may be put into a pit which is about 18 inches deep, or placed on the surface of the ground to the depth of about 2 feet. The bed of manure in either case should extend a foot beyond each side of the frame. As each layer of manure is placed on the bed it should be tramped firmly. After placing frame on bed, bank the manure around the side, and place then a few inches of soil on top of manure in the frame. Cover with sash, and when temperature has dropped to 80 degrees, seed may be sown in the soil in the hotbed, or in flat boxes similar to those recommended for use in the house.

In the management of hot-bed do not allow temperature to run too high. Open slightly in day time permit fresh air to enter and rank gases to escape. Water during the middle of the day, and keep soil damp, but not wet.

Before transplanting plants grown in the hotbed to the open field they should be "hardened off." This should be started about two weeks before the plants are ready to be transplanted, and may be accomplished by increasing the time each day that the sash is kept off the frame, until it is removed altogether.

Cultural Methods for Different Vegetables.

Asparagus.—The patch may be started by sowing seed or by buying one-year-old plants. Plant seeds about 6 inches apart, and transplant the following year to permanent rows 4 feet apart, and plants 20 inches apart in the rows.

Rich ground is necessary and a heavy application of manure well worked into the soil is essential to ensure proper growth. When

preparation is completed, dig out a trench 6 inches deep and 4 inches wide and set plant in the bottom. Cover the plants with 3 inches of soil, and as plants grow fill in with soil until surface level is reached. Keep well hoed through the summer. In the fall cut off old stalks and burn.

Cutting is commenced the third year after planting and may be kept up until the end of June, but not later.

Beans.—Beans require a rich, warm, loose soil. This can be accomplished by digging and working thoroughly before planting. With the exception of the Broad Windsor, beans should not be sown until all danger of frost is over. Broad beans should be sown early in the spring, as they require a long cool season.

Beets.—For the early crop the seed may be sown as soon as the ground can be prepared in the spring. For the winter crop the seed may be sown about June 1st. A rich soil and constant cultivation are necessary to produce quality. On a new piece of soil a light dressing of slaked lime well worked into the soil before planting will be found to be beneficial.

Broccoli.—Closely resemble cauliflower, although the heads are smaller and the plant is much hardier. It is a cool-weather crop and really makes its best growth during the fall. Heads are blanched in the same way as cauliflower. Recommended as a winter crop for Vancouver Island. Sowing may be made at the same time as cabbages.

Cabbage.—For early cabbage a well-drained piece of soil is desirable, while late cabbage will do better on a cooler and heavier soil. Thorough working of the soil in the spring as well as in the fall is advisable.

For early cabbage the seed may be sown in the hotbed from February 1st to March 1st. Transplant the seedlings about three weeks later into a cold frame in order to harden them off. About three weeks later transplant to the garden. Early cabbage may also be started by sowing the seeds in rows about 6 inches apart in the garden about the end of July, and transplanting to permanent rows in the garden about September 1st. Here they are allowed to pass the winter and will be in satisfactory shape to start growth in the spring. Early plants for spring planting may also be secured by planting seed about the middle of August and leaving in the seedling rows through the winter. Late-cabbage seed is usually sown about the end of April and the plants set in the field about June 1st. Constant cultivation should be given as cabbage requires lots of moisture.

Cauliflower.—Any soil that will grow good cabbage will do for cauliflower. Continuous growth is important, as any check to growth will give a product poor in quality. The early and late varieties are started the same as early and late cabbage. When the heads are about the

size of a teacup, the leaves should be tied together at the top or broken over so as to shade the flower; this ensures a good white flower.

Carrots.—The soil should be deeply and thoroughly prepared and of loose texture in order to admit of even root-development. The seed is sown in the open ground in drills 18 inches apart and the plants thinned to 2 inches apart. The root should be well covered with soil, thus preventing it from becoming green and unfit for table use.

Celery.—The chief requirements for celery are plenty of moisture and an abundant supply of plant-food. Barnyard manure is the best fertilizer and heavy applications should be made.

The seed for early celery should be started in shallow boxes any time about the middle of March. When about 3 inches high, transplant to boxes similar to those in which the plants were grown. Here they are set 3 inches apart each way and remain until they are set in the garden-row. For late celery the seed may be sown in a bed made in one corner of the garden. The seed is sown thinly, covered lightly, and the plants grow here until set in the garden-row.

When setting plants in the garden-row the double-row system will prove the most satisfactory. Here the plants are planted 5 inches apart and the two rows 6 inches apart. If a second row is planted, it should be at least 4 feet from the first double row. In planting, do not dig out a trench but plant on the level, and in order to blanch the celery in the fall, heap the earth up around it.

When storing, dig with roots on; stand upright in earth in cellar or pit. Place two rows together, with a few inches between the double rows.

Sweet Corn.—The soil should be very rich in plant food. A heavy application of barnyard manure and soil worked well are essential to success. Sow seed as soon as danger from frost is over. Constant hoeing is necessary to keep down weeds and maintain growth.

Cucumber.—The general recommendations made for corn apply also to this vegetable. Hills are made about 4 feet apart each way. A large quantity of manure is dug into a hill and the seed planted when danger of frost is over. About eight seeds are planted, but when the plants are up all are removed but four in a hill. Seeds may also be started in a hotbed and the plants transplanted to the garden.

Herbs.—All herbs are grown from seed sown in the open ground in early spring. A shallow furrow is dug with a trowel or hoe, the seed scattered in this furrow, and covered lightly with soil. Summer savory and sweet marjoram should be cut when in full bloom, and sage should be cut before fall rains sand the foliage badly. Parsley sown in the spring may be left in the ground during the winter, where it will remain fit for use at any time.

Lettuce.—Plenty of manure and water are essential. The seed may be sown in the open as soon as the ground can be worked in the spring. For a fall crop the seed may be sown the last of August.

Onions.—Well-worked soil rich in plant-food is essential. Work the soil thoroughly by digging and raking. Sow seed in shallow furrow and firm soil over the seed. Seeding should commence as soon as possible in the spring in order that the plants become well established before the hot, dry weather. When plants are large enough to be used as green onions they should be thinned to about 4 inches apart. The withering and falling of the tops indicate maturity and the onions should be pulled. After pulling, leave them in rows on the ground to dry; this will take about a week; when dry, they may be topped and stored.

Onion-sets may be bought as desired from the seedsmen. They may be set in the spring as soon as all danger from frost is over, care being taken not to set too deeply. The same care and preparation of the soil as recommended for onions is advisable for growing onions from sets. The sets should be placed in rows 14 inches apart and 3 inches apart in the rows. When placed in the rows they should be barely covered.

Parsnip.—Parsnips require the same kind of soil and preparation as advised for carrots. The plants are sown in drills and thinned to 4 inches apart.

Peas.—Peas may be sown in the spring as soon as the ground can be worked. Thorough manuring and the deep-working of the soil is recommended. Seed is sown in rows 2 feet apart. Successional sowings may be made up until the middle of May, but as the pea is a cool-season vegetable early plantings are the most successful.

Radish.—The seed may be sown in the spring as soon as the ground is fit to work. Successive sowings ten days apart may be made up until June 1st. Fall plantings may be made between the middle and the end of August. It also makes a very good crop for hotbed work.

Rhubarb.—A rich soil is very desirable for rhubarb. A heavy application of barnyard manure combined with deep and thorough digging should be the rule before setting out the plants.

Plants may be obtained either by planting seed or by obtaining crowns. For the home garden it is more satisfactory to buy plants from the nurseryman or florist. Planting may be done in either the fall or spring, and the plant set so that the top is just below the level of the ground.

The first year it is advisable to remove as few stalks as possible in order that the roots may become well established. Manure heavily in the late winter or early spring and dig into the ground.

In order to force rhubarb in the small garden, the following practice is usually carried out: About February 1st invert a barrel over each

rhubarb-root, and then bank the sides to the height of at least 2 feet with barnyard manure. In about 3 weeks the rhubarb under the barrel will be fit for use.

Spinach.—One of the earliest garden products. The seed may be sown in the spring as soon as the ground can be worked, and successional sowings made every two weeks until the middle of May. The ground cannot be made too rich, and the richer it is the less liable the plant is to go to seed. For a fall crop, seeding should be done about August 1st. For a crop that you intend to carry through the winter and use in the early spring, seeding should be done about September 1st.

Squash.—The hills for planting are prepared similarly to those recommended for cucumber-growing. The hills are placed in rows 4 feet apart each way. Plant seed as soon as danger from late frost is past. Vegetable marrow may be used as soon as they are of sufficient size. Late varieties may be harvested as soon as the vines begin to die in the fall. When harvesting, leave part of the stem attached to the squash, as this will lessen danger from rot.

Squash should be stored in a thoroughly dry and frost-proof room.

Tomatoes.—For the garden, plants may be raised by the gardener or obtained from the greenhouse-man. The latter will be found to be the most satisfactory for the city man. Plants are set in the garden in rows 3 feet apart and from 18 inches to 2 feet apart in the row. The plants are set in the ground when they are 7 to 9 inches high and are trained to a single stem which is supported by tying to a stake. All laterals are removed, and when the plant is about 4 feet high it is pinched back. Good tomatoes may be grown without training.

Turnips.—For the early crop the seed may be sown as soon as the ground can be worked in the spring. For the main crop for winter use the seed is sown about June 1st. A continuous growth is necessary to produce quality; a growth checked by heat or lack of moisture develops a root containing much fibre and lacking in quality.

Variety and Planting Table for the Home Garden.

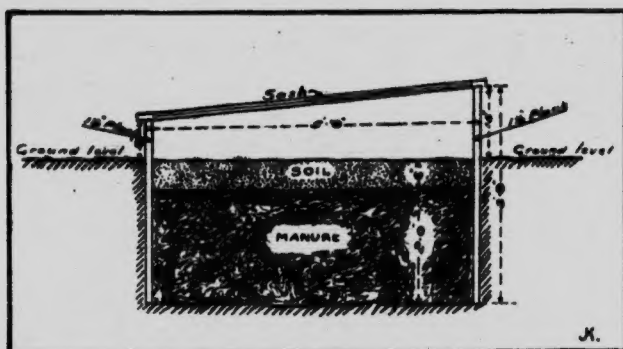
The following table is for the purpose of giving the beginner some idea of the quantity of seed necessary to plant a small garden, as well as indicating in a general way the dates of planting. Dates of planting, however, will vary with the season and district.

<i>Vegetables.</i>	Quantity of Seed or Plants for 100 Feet of Row.	When to plant in Open Ground.	Distance between Rows.	Distance between Plants in Row.	Plant in Hills or Drills.	Depth to plant Seed.	Varieties.
<i>Vegetables.</i>							
Asparagus (seed)	1 oz.	April 1	3 feet	6 inches	Drill	1 inch	Argenteuil, Palmetto.
Asparagus (plants)	50 plants	May 15	4 feet	20 inches	Hill	6 inches	Argenteuil, Palmetto.
Beans (bush)	1 pint	Mar. 1	2 feet	6 inches	Drill	1 1/2 inches	Refugee, Golden Wax.
Beans (pole)	1 pint	May 15	2 feet	6 inches	Drill	2 inches	Windsor Broad.
Beets	2 oz. or 1 packet.	Mar. 1-May 1	18 inches	3 to 4 inches	Drill	1/2 inch	Scarlet Runner, Kentucky Wonder.
Broccoli	1/4 oz. or 1 packet.	Mar. 15-July 25	2 feet	18 inches	Drill	1/2 inch	Egyptian, Detroit Red.
Cabbage (seed)	1/4 oz. or 1 packet.	Mar. 15-July 25	2 feet	18 inches	Drill	1/2 inch	Watchorn, Veitch's Autumn.
Cabbage (plants)	40 plants	Mar. 15-July 25	2 feet	18 inches	Drill	1/2 inch	Early Wakefield, Ball Head (Late).
Carrots	1 oz. or 1 packet.	Mar. 25	18 inches	2 inches	Drill	1/2 inch	Early Wakefield, Ball Head (Late).
Cauliflower (seed)	1/4 oz. or 1 packet.	Mar. 25	2 feet	18 inches	Drill	1/2 inch	Chantenay, Danvers.
Cauliflower (plants)	40 plants	Mar. 15-July 30	2 feet	18 inches	Drill	1/2 inch	Snowball, Erfurt.
Celery (seed)	1/4 oz. or 1 packet.	April 1	3 feet	5 inches	Drill	1/2 inch	Snowball, Erfurt.
Celery (plants)	200 plants	May 10	3 feet	5 inches	Drill	1/2 inch	White Plume, Golden Self Blanching.
Corn	1/4 pint	May 24	3 feet	3 feet	Hill	2 1/2 inches	White Plume, Golden Self Blanching.
Cucumber	1/4 oz. or 1 packet.	April 1	2 feet	4 feet	Hill	1 inch	Golden Bantam, White Cory.
Kale	1/4 oz. or 1 packet.	Mar. 1	15 inches	12 inches	Drill	1/2 inch	White Spine, Davis Perfect.
Lettuce	1/4 oz. or 1 packet.	Mar. 1	15 inches	12 inches	Drill	1/2 inch	Dwarf Green, Curled Scotch.
Onion (sets)	1 quart	Mar. 25	14 inches	4 to 6 inches	Drill	1/2 inch	Grand Rapids, May King.
Onion (plants)	1/4 oz. or 1 packet.	Mar. 25	14 inches	4 inches	Drill	1/2 inch	Danvers, Australian Brown.
Peas	1/4 oz. or 1 packet.	Mar. 25	18 inches	2 inches	Drill	1/2 inch	Dutch, Shallots.
Peas	1 quart	Mar. 25	2 feet	2 inches	Drill	1/2 inch	Champion, Moss Curled.
Peas	8 pounds	Mar. 25	3 feet	2 inches	Drill	1/2 inch	Hollow Crown.
Radish	1 oz. or 1 packet.	Mar. 25	14 inches	12 inches	Hill	4 inches	American Wonder, Nott's Excelsior.
Squash	1 oz. or 1 packet.	Mar. 1	14 inches	12 inches	Drill	1/2 inch	Early St. George, Up-to-date.
Tomatoes	1/4 oz. or 1 packet.	May 10	14 inches	4 inches	Drill	1/2 inch	French Breakfast, Icicle, Rosy Gem.
Turnips	1/4 oz. or 1 packet.	May 25-June 25	3 feet	2 feet	Hill	1/2 inch	Vegetable Marrow, Hubbard.
Turnips	1/4 oz. or 1 packet.	May 25-June 25	2 feet	2 feet	Hill	1/2 inch	Earliana, Bonny Best.
<i>Small Fruits.</i>							Snowball, White Milan.
Raspberry	.....	April 1	6 feet	2 feet	Hill	.....	Cuthbert.
Strawberry	.....	April 1	2 feet	2 feet	Hill	.....	Marshall.
Rhubarb	.....	April 1	4 feet	2 feet	Hill	.....	Victoria, Linnea.
Gooseberries	.....	April 1	4 feet	4 feet	Hill	.....	Oregon Champion.
Currants	.....	April 1	4 feet	4 feet	Hill	.....	Naples (Black), Cherry (Red).

Summary.

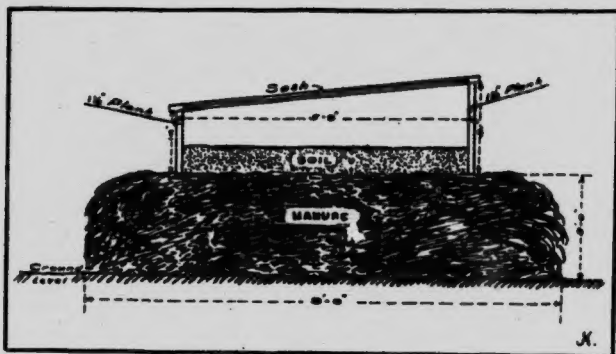
Plant staple crops; preferably, those which can be kept, such as peas, beans, potatoes. Plant new, rough, or weedy lots to the coarser crops, such as potatoes, beans, peas, beets, turnips, cabbage, etc.

Do not attempt too many different crops in the beginning; better make a success of one or a few and branch out gradually. Do not attempt novelties in a large way; they are usually only something to sell at a fancy price to the inquisitive.



This style of hotbed should only be built on well-drained ground.

Thorough preparation of land before planting and throughout the season is the all-important factor towards success in gardening. Get after the weeds early, just as they are germinating; they are most easily killed at this time and have not sapped the soil of plant-food and moisture.



Where the ground is poorly drained it is not advisable to dig a pit for the manure, but equally good results can be obtained from the method shown above.

Use well-rotted manure, if it can be got; if not, use commercial fertilizers. Do not apply fresh strawy manure in the spring, as it will leave the ground too loose for a good seed-bed.

Trim up the corners, fence rows and ends of your garden lot; it will improve its appearance and add greatly to the general beauty of the city.

Do not neglect the flower-garden; it will add greatly to the pleasure of the home.

Enter the city-garden contest, if one is being held; it will stimulate a further interest in the work by the friendly rivalry created.

Ask the Horticultural Branch for further advice or circulars on pests, crops, fertilizers, cultivation, etc.; they are at your service.

Victoria, B.C., issued March, 1918.

This circular has been prepared by W. H. Robertson and E. W. White, Assistant Horticulturists, Victoria, B.C.

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